QUALITY ASSURANCE/QUALITY CONTROL
SM 6020 – 2011 *(As published in SM 22nd Edition)*

Facility Name: _____ LAB ID: _____

Assessor Name: _____ Analyst Name: _____ Inspection Date: _____

Records Examined: SOP Number/ Revision/ Date: _____ Analyst: _____

Sample ID: _____ Date of Sample Preparation: _____ Date of Analysis: _____

Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments
Initial Quality Control					
(1) If acceptance criteria for a laboratory fortified blank used as the Initial Demonstration of Capability were not specified in the test method, were initial recovery limits calculated as follows: Initial Recovery Limits = Mean ± (5.84 x Standard Deviation) NOTE: While this process will provide initial limits, they should be considered temporary. Limits developed from more replicates (e.g., at least 20) will give a better determination of accuracy and precision.	SM6020.B.1.a				
(2) Was quantitation at the Minimum Reporting Level (MRL, also called LOQ) verified initially and at least quarterly ("*preferably*" daily) by analyzing a QC sample (subjected to all sample preparation steps) spiked at a level 1 to 2 times the MRL?	SM6020.B.1.c				
(3) Is MRL verification evaluation criterion documented in the QA documentation?	SM6020.B.1.c				
Ongoing Quality Control					
(4) Were MDLs (LODs) verified at least annually? NOTE: Not required when test results are not reported outside of the calibration range (2003 NELAC Chapter 5 Appendix D.1.2.1).	SM6020B.1.b				
(5) Did the initial calibration include at least 5 non-zero standards including one standard at or below the MRL?	SM6020.B.2.a				
(6) If a second-order (quadratic) fit was used, were at least 6 non-zero standards, including one ≤ MRL, used?	SM6020.B.2.a				

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(7) Were correlation coefficients for standard concentration-to-instrument response greater than or equal to 0.995 for linear calibrations and 0.990 for quadratic calibrations?	SM6020.B.2.a				
(8) If the average response factor was used for calculation of the concentration-to-instrument response relations, was the relative standard deviation of the response factors ≤15%?	SM6020.B.2.a				
(9) Was each calibration point back calculated to verify that the instrument value was within ±30% of the known concentration of the standard above the MRL and ±50% for standards ≤MRL?	SM6020.B.2.a				

(10) Was initial calibration verified by analyzing a mid-level second-source standard with results agreeing within ±25% unless otherwise specified in the method?	SM6020.B.2.a				
(11) Was a calibration verification sample analyzed after each 20 samples and at the end of the run unless specified otherwise in the test method (not required when internal standard is used)?	SM6020.B.2.b				
(12) Was the concentration of the calibration verification standards varied over the calibration range to determine detector response?	SM6020.B.2.b				
(13) If reporting to the MRL, were no constituents present in the MB at levels greater than one-half the MRL?	SM6020.B.2.d				
(14) If reporting to the MDL, were no constituents present in the MB at levels greater than the MDL?	SM6020.B.2.d				
(15) Was corrective action taken if constituents in excess of the MDL or one-half the MRL were detected in the MB? (*Sample results that are <MRL are VALID even if MB > MRL but <u>should</u> be qualified)*	SM6020.B.2.d				
(16) Was at least one Lab Fortified Matrix/Lab Fortified Matrix Duplicate (LFM/LFMD) prepared each day samples were prepared or with each preparation batch of 20 or fewer samples? (*If target analytes are*	SM6020.B.2.f				

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expected to be present,sample duplicate may be substituted for LFMD)					
(17) If fortification increased sample volume by more than 1%, did the laboratory account for the dilution mathematically?	SM6020.B.2.f				
(18) Did the laboratory have procedures for establishing retention time windows and monitoring retention time?	SM6020.B.2.j				
(19) Had the laboratory made initial determinations of retention time windows on each type of analytical system for each analyte?	SM6020.B.2.j				
(20) If analyte confirmation by a dissimilar column was required, were the phases sufficiently dissimilar to invert or significantly change the order of elution?	SM6020.B.2.k				
(21) Was confirmation column sensitivity certified daily to identify all compounds at the level being reported?	SM6020.B.2.k				
(22) Were all QC acceptance criteria met on both columns if both columns were used for quantitative analysis?	SM6020.B.2.k				

Comments/Notes: